

memorandum

DATE: June 6, 2006

REPLY TO
ATTN OF: Office of Air, Water and Radiation Protection Policy and Guidance (EH-41):Boulos:6-1306

SUBJECT: Information - Clean Air Act Notice of Acceptability of Substitutes for Ozone-depleting Substances

TO: Distribution

On March 29, 2006, the Environmental Protection Agency (EPA) issued a Notice of Acceptability in the *Federal Register* (71 FR 15589) on "Protection of Stratospheric Ozone: Notice 20 for Significant New Alternatives Policy Program." The notice is potentially applicable to DOE sites that are seeking safe alternative chemicals to replace ozone-depleting refrigerants.

The notice is available at the Department of Energy (DOE) Environmental Policy and Guidance Web site at: <http://www.eh.doe.gov/oepa/rules/71/71fr15589.pdf>. It is issued under the Significant New Alternatives Policy (SNAP) program. SNAP's mandate is to identify alternatives to ozone-depleting substances (ODS) and to publish lists of acceptable and unacceptable substitutes. This notice:

1. Expands the list of acceptable substitutes for ODS under the EPA's SNAP program. New substitutes are identified and discussed for the refrigeration and air conditioning, and fire suppression and explosion protection sectors. Appendix A of this notice provides a summary of acceptable decisions;
2. Provides detailed information for each of the new acceptable refrigerant substitutes, in terms of: end use; chemical composition; environmental information (e.g., global warming potential;¹ ozone depletion potential²); toxicity and flammability; and comparison with other refrigerants. EPA's most recent acceptable listing decisions for refrigeration and air conditioning substitutes are:
 - ICOR AT-22 is acceptable for use in new and retrofit equipment as a substitute for HCFC-22;
 - ICOR XLT1(R-422C) is an acceptable substitute for HCFC-22, R-502, R-402AR-402B, and R-408A;
 - ICOR XAC1(R-422B) is an acceptable substitute for HCFC-22;

¹ Global warming potential (GWP) is a number that refers to the amount of global warming caused by a substance. The GWP is the ratio of the warming caused by a substance to the warming caused by a similar mass of carbon dioxide (CO₂). Thus, the GWP of CO₂ is defined to be 1.0. Chlorofluorocarbon (CFC)-12 has a GWP of 8,500.

² Ozone depletion potential (ODP) is a number that refers to the amount of depletion caused by a substance. The ODP is the ratio of the impact on stratospheric ozone of a chemical compared to the impact of a similar mass of CFC-11. Thus, the ODP of CFC-11 is defined to be 1.0. Other CFCs and hydrochlorofluorocarbons (HCFCs) have ODPs that range from 0.01 to 1.0.

- R-417A is an acceptable substitute for R-22;
- Hydrofluorocarbon (HFC)-245fa is an acceptable substitute for CFC-11, CFC-113, CFC-114, HCFC-21, HCFC-123, and HCFC-141b; and
- R-420A is an acceptable substitute for CFC-12.

Comprehensive SNAP lists can be obtained through EPA's Stratospheric Ozone Protection Hotline at: 1-800-296-1996. Also, a complete chronology of SNAP decisions can be found at: <http://www.epa.gov/docs/ozone/snap/chron.html>. Questions on this notice can be directed to Mr. Emile Boulos of my staff at: emile.boulos@eh.doe.gov; 202-586-1306.



Andrew Wallo
Director
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